

**REMARKS**

Claims 1- 29 are pending in the application. Claims 1 and 15 are independent claims.

The specifications have been amended to identify references in the section on "Background of the Invention" that are in Russian language and translations are not available. In addition, the *Kaufman* reference from a book has been replaced by two readily available journal publications.

Independent claims 1 and 15 have been amended to replace the term "temporal" with the more accurate term "transient.". This term is used, for example, in paragraph [0022] of the application to delineate the advantages of the present invention.

Claim 4 has been amended to make its language consistent with that of amended claim 1.

Functional language in the system claims has been replaced with operative language.

Claim 18 has been amended to make its language consistent with that of amended claim 15.

No new matter has been added by the amendments. Reconsideration of the application as amended is respectfully requested. The Examiner's objections and rejections are addressed in substantially the same order as in the referenced Office Action.

#### **THE INFORMATION DISCLOSURE STATEMENT**

The Examiner has requested copies of background material referenced in the section on "Background of the Invention." Some of the references are in Russian with no English translations available and have been identified as such. Instead of the *Kaufman* reference from a published book, two published papers by the same author on the same subject are being submitted in an Information Disclosure Statement. A copy of a publication by an employee of Stolar Horizons is being submitted.

#### **OBJECTIONS TO THE SPECIFICATIONS**

The Examiner has interpreted the term "finite non-zero conductivity" to include conductivity found in materials from super-conducting wire to the extreme of high resistivity. As noted below, an important aspect of the claimed invention is the use of a method and a processor which implements a method that accounts for, and is insensitive to, the conductivity of the housing. This is in contrast to prior art methods which do recognize this problem.

**OBJECTIONS TO THE CLAIMS**

The Examiner has objected to claims 4 and 18 because "it is not clear if the sensitivity of the receivers is independent of the spacing to the transmitter or the spacing between the transmitter and the receiver is dependent on the positioning."

The answer is "Neither." What is clearly claimed in claims 4 and is the insensitivity of the third transient signal to the spacing between said transmitter and said at least one receiver. This is noted in paragraph [0022] of the application.

**REJECTIONS UNDER 35 USC § 103**

Claims 1-29 stand rejected under 35 USC 103 over *Tabarovsky* (US 5703773).  
Claims 1 and 15 are independent claims.

The present invention is a method and system for determining formation properties using transient electromagnetic signals. The method may be used to correct for the effects of finite, non-zero conductivity of the tool.

The teachings of *Tabarovsky* are different from the claimed invention in at least two respects.

First, *Tabarosky* teaches a frequency domain method in which measurements made at a plurality of frequencies are extrapolated to zero frequency. See specifically, the **Abstract**, and **col. 12 lines 35-40**. See also, generally, the analysis in the frequency domain at **col. 6 line 20-col 8 line 2**.

Secondly, *Tabarovsky* does not disclose or suggest the effect of finite non-zero conductivity of the tool on the measurements. Such a teaching is there in US6906521 to *Tabarovsky et al.*, commonly owned and co-pending with the present application at the time of filing. The '521 patent is being cited in the accompanying Information Disclosure Statement.

Claim 1, as amended, includes the determination of a transient signal resulting from interaction of a produced electromagnetic signal with the earth formation. As noted above, there is no teaching or suggestion in *Tabarovsky* of such a transient signal. In addition, claim 1 also includes the determination of a third transient signal that is substantially independent of the conductivity of the tool. As noted above, there is no teaching or suggestion in *Tabarovsky* of a signal (frequency domain or transient) that is substantially independent of the tool conductivity.

Accordingly, applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness and that claim 1 and claims 2-14 that depend upon claim 1 are patentable under 35 USC § 103 over *Tabarovsky* and the prior art of record.

Applicant further notes that there is no teaching or suggestion in *Tabarovsky* of an insensitivity of a transient signal to a transmitter-receiver spacing (claim 4); the use of a time domain Taylor series expansion (claims 6-8); the use of a filtering operation (claim 9); the use of a differential filtering operation (claims 10, 11); and an integral filtering operation (claims 12, 13). Applicant has reviewed the portions of *Tabarovsky* cited by the Examiner and finds no basis for the Examiner's assertion that such elements are taught in *Tabarovsky*. Clarification is requested.

Independent claim 15 includes the substantive limitations of claim 1 discussed above. Accordingly, applicant respectfully submits that claim 15 and claims 16-29 that depend upon claim 15 are patentable under 35 USC § 103 over *Tabarovsky* and the prior art of record for the same reasons that claim 1 is patentable under 35 USC § 103 over *Tabarovsky* and the prior art of record.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 02-0429 (414-34865-US).

Respectfully submitted,

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Kaushik P. Sriram, Reg. No. 43,150  
Madan, Mossman & Sriram, P.C.  
2603 Augusta, Suite 700  
Houston, Texas 77057  
Telephone: (713) 266-1130  
Facsimile: (713) 266-8510